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DANISH WEST INDIES.

Quarantine against Trinidad on account of smallpox.

The minister at Copenhagen reports, April 20, through the Department of State, as follows:

The government of the Danish West Indies has declared a quarantine of fifteen days against vessels arriving from Trinidad, on account of the appearance of smallpox in that island.

FRANCE.

Destruction of rats in the port of Marseille.

Consul-General Skinner reports, April 22, as follows:

Dr. R. Jacques, one of the physicians of the public health department of Marseille, has published a pamphlet embodying the results of his labors and studies to prevent the city of Marseille from becoming a plague-infected port. Although the city is constantly exposed, by reason of its geographical position and the frequency of its steamship communications with the plague-ridden ports of the Levant, India, and China, the public health department has every reason to congratulate itself upon the success which has thus far attended its labors. The work is under the general direction of Dr. Catelan, chief of the service, who assigned Dr. Jacques to his immediate task. In August, 1900, the first plague-infected ship, the *Niger*, arrived at the quarantine station of Frioul, upon which occasion Dr. Catelan said:

It is probable that the epidemic originated in the migration of rats in one of the ports of call in Egypt or Syria, where cases of pest had been noted during the month preceding. In 1899 the *Equateur* had one case of plague on board while in the port of Beirut, and dead rats had been found in great number upon this steamer. The *Equateur* and the *Niger*, like all the steamers of the same company, touch the same ports in the Levant, anchor at the same wharves, and the rats passing back and forth assuredly constitute the greatest danger of dissemination of the plague. However well the rats may be destroyed upon a given steamer, a certain number escape and return, and the circulation between the steamer and the land is incessant. No absolutely radical method has yet been found to prevent this.

In consequence of the danger arising from this source, official instructions were prepared, prescribing careful surveillance during the discharge of cargoes from suspected steamers and measures of prevention against the exodus of rats from the same. In 1901 a special service was organized in Marseille, and a corps of 10 persons, directed by Dr. Jacques, was formed for the exclusive purpose of carrying out these instructions. Dr. Jacques says:

The result has been as follows: From October, 1901, to January, 1902, 133 suspected steamers were inspected, of which 15 were noted as having infected rats on board. Of the 15, 9 contained rats seriously infected, and on 6 of them were rats less seriously attacked. From January to April, of 104 steamers inspected, 2 only contained rats plainly infected, and on 3 were animals suffering more mildly. From April to July 114 steamers were examined, 1 of which was found to contain infected rats, a discovery which was followed shortly thereafter by the breaking out of 2 cases among the men on board. From July to the end of September 111 steamers were inspected, on board 10 of which were infected rats, and on another rats less markedly so. From October to the end of December, 1902, 93 steamers were inspected, and a very light degree of infection was found among the rats on board 2 of them, and on 1 rats profoundly infected. The observations throughout the year confirm the first idea of Dr. Catalan that epidemics on board ship among crew and passengers arise from infection resulting from the presence of rats, an infection dating back a long time, perhaps, and communicated by contact.

The means at the disposition of the sanitary administration to fight against the epidemics among rats have been entirely insufficient, and the success obtained has been due to the rigorous repetition, on the arrival of every steamer, of constant and energetic police measures. The following has been the method adopted: Upon the arrival of the steamer a sanitary guard is placed on board, who immediately attaches to all anchors and chains balls composed of brooms pointing in every direction and in such manner as to prevent the rats on board from reaching the land and those on shore from coming on board. This precaution, carefully taken, is excellent, and it is not infrequent to find several old rats and from eight to ten young rats clustered together in these brooms. Many captains employ metal disks upon their chains and anchors. These disks are good while new, but in time become bent and broken and permit the passage of the animals. We also guard the communicating plank between the ship and the wharf and locate numerous traps in various parts of the vessel.

When an instance of infection is recognized, in the case of dead or living rats, examined in the laboratory, originating on board a steamer discharging cargo, the ship is returned to the quarantine station of Frioul, where it is disinfected, compartment by compartment. In some instances two complete disinfections have been made, the steamers meanwhile being isolated and all communication with the land forbidden. During the discharge of cargo a medical surveillance is exercised upon all persons employed on board, whose names and addresses are carefully noted. When the discharge of the cargo is completed the sulphuration of the empty holds commences. The quantity of sulphur is 40 grams per cubic meter, and the holds are closed during a period of twenty-four hours. Sulphurations in empty holds have not given the results that were expected. When a hold is freed of its merchandise a large proportion of the rats which it contains have also sought the higher regions. Nevertheless from the month of October, 1901, until the end of the month of December, 1902, this special service captured, on board the 555 inspected steamers, 192 dead rats, 3,284 living rats, and 6,578 suspected rats, giving a total of 10,054 rats destroyed in fifteen months. If we compare the figure of 10,054 rats destroyed upon 555 steamers during discharge of cargo over a period of fifteen months with the figure of 38,207 rats captured on board the same steamers during their voyages in a period of a single year, such an enormous difference is established as to render one fairly certain that all the rats on board these particular steamers have not been destroyed. And this is so true that when certain steamers are subjected to two or three successive sulphurations additional rats are found asphyxiated upon each occasion.

From the inauguration of the present system every effort has been made to discover some process for preventing the migration to land of animals concealed in the merchandise. To do this it is clearly necessary to operate while the holds are yet filled with their cargo. The higher administration prescribed the sulphuration of holds while in this condition, but this method is not practically applicable. The syndicate of shipowners during the year organized a meeting of merchants and importers at the chamber of commerce and, after carefully considering the question, it was unanimously decided that the sulphuration in the presence of merchandise was dangerous and liable to result in expensive litigation. The importers of tea, coffee, and silks particularly declared that they would not submit to this practice, except upon the condition that the Government would be responsible for losses and deteriorations.

In abandoning the sulphur it became necessary to have recourse to some other disinfectant gas, inasmuch as there is no parasiticide which is at the same time a microbicide which fails to damage merchandise in some manner.

The asphyxiating gas which was experimented with and employed at Marseille is liquid carbonic acid, directed into the hold before any manipulation of the cargo takes place. For the sake of convenience this operation has been called "carbonication." Some ten or twelve years ago the use of the gas CO_2 was tried at New Orleans. A chemist at Constantinople, Mr. Apery, three or four years ago also called attention to the advantages of carbonic acid for the destruction of rats on board steamers. In 1901, Mr. Lafon, of Lyon, proposed to the health department of Marseille to proceed with experiments on board ships arriving from contaminated ports. The health department controlled these experiments. It would require too much space to explain in detail all that was undertaken. Suffice it to say, that at the first attempt, operating upon the empty holds of the *Natal*, and with a very elementary apparatus, the results of asphyxiation in the case of animals placed in cages at various levels, and at every corner, with a preparation of 25 per cent of CO_2 , during two hours, encouraged the study of this method. In addition to the rats in traps, those in charge found in the holds of the *Natal* 11 large rats living on board the ship asphyxiated in their natural positions without having attempted to escape. The advantage

of CO₂ is that it asphyxiates the animals wherever they may be. Since the gas has no odor, it does not occur to the rats to search for means of escape.

With a perfected apparatus for the use of this gas, the system devised by Mr. Lafon has given very satisfactory results. I furnish herewith a draft of the boat containing the apparatus. It must be avowed that a completely satisfactory solution of the problem of the total destruction of rats on board ships has not been found. If there are no damages to fear, or if the rats in the hold are infected, it is possible to use SO₂, but in cases of ordinary steamers loaded with miscellaneous merchandise it is necessary to employ the carbonic-acid process.

Measles prevalent at Nantes—House disinfection for tuberculosis.

Consul Ridgely at Nantes reports, April 10, as follows:

The prevalence of measles is unusually great, and the form of the disease exceptionally virulent.

Tuberculosis.—The monthly report of the health office calls attention to the fact that tuberculosis is contagious, and states that during the month of March 39 houses in which deaths from tuberculosis had occurred had been disinfected by the authorities.

GERMANY.

Report from Berlin—Plague and cholera in various countries.

Consul-General Mason reports, April 24, as follows:

Plague.

Aden.—On the 9th of March a stoker who had been landed two days previously from the steamer *Syria* died of plague at Aden.

British East India.—In the city of Mangalore 1 case of plague, with fatal termination, occurred on the 15th of March.

Mauritius.—During the period from the 6th of February to the 12th of March 13 cases of plague (with 5 deaths) occurred on the island.

South Africa.—During the week ended March 21 there were registered 7 cases of plague in Port Elizabeth and 2 cases in East London. On the steamer *Nerassa*, during the same week, 4 Asiatics were found to be suffering with plague. The ship had been in quarantine since the 18th of March.

Queensland.—During the week ended March 6 1 death from plague occurred in Brisbane.

West Australia.—On the 7th of March there were still 2 patients under treatment, but, according to the official bulletins, no new cases were recorded during the first week of March.

Plague and cholera.

British East India.—During the two weeks from the 15th to the 28th March there were registered in Calcutta 1,567 deaths from plague and 97 deaths from cholera.

Cholera.

Turkey.—According to the official bulletin regarding cholera in Syria there were registered in Damascus, between the 30th of March and 5th of April, 8 new cases of cholera and 13 deaths, and between the 6th and 11th of April, 10 cases (12 deaths). The total number of deaths since the fresh outbreak of the disease amounted to 74.